CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 85-94

WASTE DISCHARGE REQUIREMENTS FOR:

WESTINGHOUSE ELECTRIC CORPORATION
SUNNYVALE SITE
SUNNYVALE, SANTA CLARA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region, (hereinafter called the Board), finds that:

1. Westinghouse Electric Corporation, (hereinafter called the discharger), owns a 75 acre site in Sunnyvale, Santa Clara County, located to the west of the intersection of Fairoaks and California Avenues.

2. Prior to 1964, electric apparatus, including transformers containing poly-chlorinated biphenyl (PCB) and tri-chlorobenzene, was manufactured and serviced at the site. In 1964, production and servicing of marine products began. PCBs were not used at the site after this date.

3. Studies completed by the discharger have shown that contamination of shallow soils and groundwater has occurred. Soil contamination was shown to consist mainly of PCBs in soils located along the perimeter fenceline, in residential backyards adjoining the western fenceline, in storage yard areas on the northern side of the property, and in a former PCB storage area in the southeast corner of the site. Groundwater contamination was shown to consist of PCB and trichlorobenzene in aquifers beneath the former PCB storage area.

4. Regional Board staff requested in a letter dated April 16, 1984, that the discharger submit a technical and economic analysis of cleanup alternatives pursuant to the Board's "Hazardous Material Cleanup Guidelines".

5. The Board adopted Order No. 84-63 on September 19, 1984 establishing cleanup requirements for the perimeter fenceline and offsite residential areas.

6. The discharger completed cleanup of shallow soils along the perimeter fenceline and in adjacent residential backyards in November 1984 in accordance with Order No. 84-63.

7. The discharger in a letter dated February 7, 1985 outlined a plan and schedule for additional shallow onsite soil cleanup and for conducting further investigation.

8. The letter referred to in Finding 7 did not provide for timely completion of the needed groundwater investigation and did not analyze the range of

alternatives previously requested in the April 16, 1984 staff letter referred to above.

9. The Executive Officer in a letter dated March 26, 1985 reiterated and clarified staff requests for soil cleanup alternative and cost data and requested that resolution of deep soil contamination and groundwater contamination issues proceed at a faster pace.

10. The discharger in a letter dated May 31, 1985 provided limited additional cost data on soil cleanup alternatives in the northern yard areas, but did not provide a clear and acceptable schedule for proceeding with other aspects of the site investigation and cleanup.

11. The Department of Health Services (DHS), in a memorandum dated May 21, 1981 and revised in October 28,1981, set forth the Department's policy on cleanup of PCB spills and established 50 mg/kg as a general soil cleanup objective.

12. Removal of soil contaminated with PCBs at concentrations exceeding 50 mg/kg in the northern yard areas, central railroad spur and related areas in combination with erosion control measures to minimize or prevent contaminated surface runoff constitutes an acceptable remedial program for these areas.

13. The conclusion of Finding 12 is based on the fact that the required measures are adequate to prevent significant threat to ground and surface waters posed by low levels of PCBs remaining in shallow soils and on the fact that more stringent measures would result in significantly greater cost without corresponding benefits to water quality or beneficial uses of State waters.

14. For portions of the site other than northern yard areas, central railroad spur, and related areas, additional cost and contaminant distribution information is needed to determine an appropriate cleanup level.

15. The discharger caused or permitted to cause waste and hazardous substances to be deposited in groundwaters of the State and caused or permitted to cause waste and hazardous substances to be deposited where it threatens to be discharged to surface waters of the State.

16. This Order establishes cleanup standards for the removal of contaminated soils and establishes a schedule for soil and groundwater contamination investigations. Compliance with this Order will result in minor modifications to land and such activity is exempt from the provisions of the California Environmental Quality Act (CEQA) pursuant to Section 15104, Chapter 3, Title 14, California Administrative Code.

17. The Board has notified the discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for the discharge and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.

18. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

It is hereby ordered that, Westinghouse Electric Corporation, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, shall comply with the following:

A. Prohibitions

1. The discharge of waste or hazardous materials in a manner which will degrade the water quality of or adversely affect beneficial uses of the groundwaters of the State is prohibited.

2. Further migration of pollutants through subsurface transport to usable groundwaters is prohibited.

B. Specifications

1. The treatment or disposal of waste shall not create a nuisance as defined in Section 13050(m) of the California Water Code.

2. The discharger shall conduct monitoring activities and file reports thereon as needed to define the current local hydrogeologic conditions and the lateral and vertical extent of groundwater pollution in and contiguous to the zone of known pollution.

3. The discharger shall implement an erosion control plan to prevent the discharge to surface waters of toxic substances at concentrations or in quantities likely to adversely affect beneficial uses of the receiving waters.

C. Provisions

Compliance with Prohibtions A.1 and A.2 and Specifications B.2 and B.3 shall be achieved according to the following Provisions:

1. The discharger shall remove shallow soils contaminated with PCBs above 50 mg/kg in northern yard areas and other appropriate areas other than the vicinity of Reservoir 2 as follows:

	Report Due
a. Complete the definition of extent of contamination by performing the following tasks:	August 1, 1985

(1) sample previously unsampled areas along the northern portion of site at 0"-6" and 6"-12" in at least the following locations: railroad tracks north of Bldg. 54, railroad tracks south of Bldg 53, a point 40' south of sampling point 25, and a point 80' south of sampling point 25,

points 40' to the north, south and east of sampling point 159, a point 40' to the south of sampling point 163, a point 40' to the east of sampling point 173. Sampling station numbers are those of Figure 4-1 of December 1981, "Phase I" Report. Analysis of 0"-6" samples shall be made the 9 stations referred to above; analysis of 6"-12" samples shall be made if 0"-6" sample is contaminated with PCBs at concentrations exceeding 50 mg/kg or if field observations suggest that the deeper layer may be more representative of soils potentially exposed to PCBs.

(2) submit plan for sampling soils below the buried PCB tank in the northeast yard area

b. Submit maps, acceptable to the Executive Officer, showing locations and horizontal and vertical dimensions of proposed excavation. Said maps shall be at a scale of about 1 inch equal to 40 to 80 feet and shall show the analytical results for samples in each proposed layer of excavation. Horizontal limits of excavation shall be based on the assumption that contamination extends 20 feet, or to the nearest building, from any sampling point showing a PCB concentration greater than 50 mg/kg, except as otherwise indicated on said maps. Alternatively, horizontal limits may be reduced to 10 feet from any point with contamination greater than 50 mg/kg, where additional sampling shows the following three locations are contaminated at concentrations less than 50 mg/kg: at points "I" and "II" located 10 feet and 20 feet respectively from the contaminated sampling location along a line between sampling stations and at a point "III" located along a line perpendicular to the first line through point "II" and 20 feet from point "II". — Report Due August 1, 1985

c. Remove soils shown to be contaminated with PCBs at concentrations greater than 50 mg/kg in areas and at depths designated on maps referred to in Finding 1.b above. Excavation required in railroad track areas will be performed to the extent possible without compromising track stability, according to construction details acceptable to the Executive Officer. — October 1, 1985

d. Backfill excavations in a manner so as to prevent erosion of adjacent soils and reexposure of deeper contaminated soils. — October 15, 1985

e. Submit a report of compliance with Provisions 1.c and 1.d above — December 7, 1985

2. The discharger shall investigate shallow and deep contaminated soils in the vicinity of reservoir 2 according to the following schedule:

	Report Due
a. Define contaminant distribution in deep soils near wells 16, 14 and 15 and in shallow soils in the general vicinity of Reservoir 2 so as to enable calculation of valid cost estimates for soil removal	August 15, 1985
b. Prepare cost estimates for extracting shallow and deep soils contaminated with PCBs at concentrations (1) greater than 50 mg/kg, and (2) greater than 5 mg/kg. Alternative extraction methods for deep soil removal, such as caisson excavation, shall be investigated.	September 15, 1985

Cost estimates shall include unit costs and clear descriptions of the assumptions upon which the estimates are based.

The Board intends to establish cleanup objectives for this area after review of cost data and other pertinent information. The Board intends to consider alternatives to soil excavation, as appropriate.

3. The discharger shall take action to minimize or prevent the discharge of PCBs to surface waters as follows:

	Report Due
a. Submit preliminary map showing site drainage pattern, for the entire site with emphasis on the flow pattern at the periphery of site and on areas of exposed soils.	August 1, 1985
b. Submit plan acceptable to the Executive Officer for providing vegetative or gravel cover in areas where contaminated shallow soils are currently exposed or will be exposed by proposed cleanup activities	August 1, 1985
c. Implement plan described in item 3.b. above	November 1, 1985
d. Submit report of compliance with 3.c	December 1, 1985
e. Submit final map showing site drainage pattern	January 1, 1986
f. Submit annual report documenting that:	beginning October 1, 1986
(1) past year's construction, operations or maintenance activities have not resulted in exposure of contaminated soils so as to be susceptible to erosion by stormwater or washwater	

(2) vegetative, gravel or paving covers of contaminated soils have not been removed without effective replacement or contaminated soil removal.

Report shall include site map and tabular summary for each area of site showing previous year's and current exposure/covering status.

The Board will review the need for continued filing of annual reports by November 1, 1988.

4. The discharger shall define the lateral and horizontal extent of groundwater contamination and investigate cleanup and containment alternatives according to the following schedule:

		Report Due
a.	Submit preliminary groundwater gradient and contaminant distribution map	August 1, 1985
b.	Submit geologic cross-sections showing water elevations, stratigraphic correlations, contaminant concentrations, and, if needed, a proposal for further well installation to define gradient and plume boundaries. Report shall include a plan and schedule, acceptable to the Executive Officer, to determine the source and to eliminate groundwater mounding in the vicinity of the highly contaminated soils near Reservoir 2.	September 1, 1985
c.	Install and sample additional monitoring wells if needed	September 28, 1985
d.	Submit preliminary gradient and contaminant distribution map based on sampling performed pursuant to 4.c. above	November 8, 1985
e.	Submit final report based on results of investigation required by 4.c and 4.d above. Report to include updated geologic cross-sections as described in 4.b. above	November 22, 1985
f.	Submit plan and schedule for remedial action to contain and/or cleanup contaminated groundwater. Said report shall investigate a range alternatives as discussed in the Board's "Guidelines With Respect To Establishing A Procedure To Identify Water Quality Objectives For Hazardous Material Site Cleanup", dated March 9, 1983.	January 22, 1986

5. The discharger shall submit technical reports on self-monitoring work performed according to a program approved by the Executive Officer.

6. In order to facilitate input to the Board from interested agencies, the discharger shall send copies of all reports and correspondence relative to this case to the following parties: Santa Clara Valley Water District, City of Sunnyvale, California Department of Health Services, Santa Clara County Health Department. Failure to so submit will constitute a violation of this Order.

7. The discharger shall permit the Board or its authorized representative, in accordance with Section 13267(c) of the California Water Code:

   a. Entry upon premises where any pollution source exists, or may potentially exist, or in which any required records are kept;

   b. Access at reasonable times to copy any records required to be kept under terms and conditions of this Order;

   c. Inspection of any monitoring equipment or methods required by this Order;

   d. Sampling of any groundwater or soil which is accessible, or may become accessible as part of any investigation or remedial action program to the discharger.

8. The discharger shall maintain in good working order and operate, as efficiently as possible, any facility or control system installed to achieve compliance with the requirements of this Order.

I, Roger B. James, Executive Officer, do hereby certify the foregoing is a full, true and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region on July 17, 1985.

ROGER B. JAMES
Executive Officer